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TR Series Block Diagram

Test Mode

1. Operation Procedures

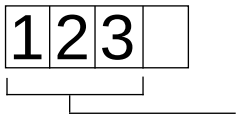
The Test mode program enables a service technician to check the operation of each electrical component in the machine.

1. [Starting Up Test Mode]

Turn ON the power while pressing the PRINT POSITION buttons ◁ and ▷ on the machine operation panel.

If the Test mode is activated, the following indication will be displayed in the print quantity display. The display shows the version number of the System ROM.

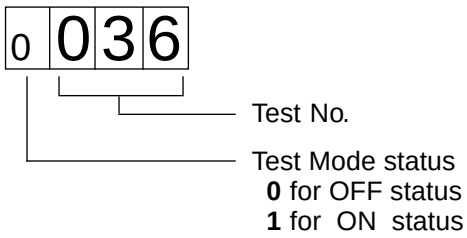
- This is a sample of the Initial condition of Test mode:



2. [Checking the Operation of a Component]

To check the operation of a component, select a test No. using panel keys.

[Example] - In selecting Test **No.36** (Original IN Sensor).



Press the **"START"** button to start the test. 1036

Press the **"START"** button again to stop the test. 0036

- If the test is a one-cycle operation test, it will automatically stop after one check.
- If the test is a non-cycle operation test, pressing the "START" button will stop the test.

3. [Selecting Another Test Number]

To select another Test No., clear the set Test No. by pressing the **"C"** or **"STOP"** button and select another Test No.

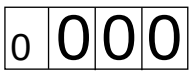
The previous Test No. is erased. 0000

Select a new Test No. (**Example: No.117)** 0117

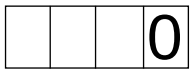
4. [Exiting from the Test Mode]

To exit from a Test mode, clear the set Test No. by pressing the **"C"** or **"STOP"** button and then press the **"ALL RESET"** button for 1 second.

The Test No. is cleared by **"C"** or **"STOP"**.



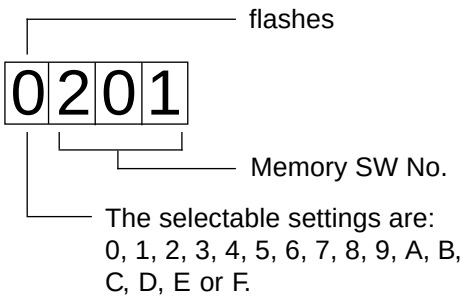
Press **"ALL RESET"** button for **1 second**.



5. [Operating the Memory SW (Test Mode No. 200 ~ 218)]

Start up the Test mode and select the Memory SW No. and press **"START"** button.

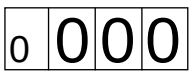
[Example] - In selecting Memory SW **No.201**.
Select **201** and then press **"START".**



Use the PRINT POSITION button ◁ or ▷ to make the setting selection.

[Example] - In selecting **"E"** for the setting, press the ▷ button until **"E"** flashes in the first display window.

Press the **"STOP"** button to input the newly selected setting.



Press **"ALL RESET"** button for 1 second.

CAUTION:

Test Mode **No.98** resets all the Memory SW selections made on the machine back to **"0"**.

2. Test Items and Operations

1) Sensor/SW Test

A beep sounds in two ways to tell the current condition.
Detection: 0.1 second interval beep
No detection: 0.5 second interval beep

No.	Test Component	Detection status
01	Paper detection sensor	Reflected light is detected
02	Elevator upper limit sensor	Light path is blocked
03	Elevator lower limit sensor	Light path is blocked
06	Paper sensor	Light path is blocked
08	Position-A sensor	Light path is blocked
09	Clamp sensor A	Light path is blocked
10	Clamp sensor B	Light path is blocked
12	Cutter position switch	Actuator is not pressed
14	Master sensor	Reflected light is detected
15	Master positioning sensor	Reflected light is detected
17	Ink pack set sensor	Light path is blocked
18	Drum set sensor	Light path is blocked
19	Paper receiving sensor	Reflected light is detected
21	ADF set sensor	Light path is blocked
22	Vertical centering sensor	Light path is blocked
23	Master end sensor	Light path is blocked
24	Master tension plate sensor	Light path is blocked
25	Master compressing sensor	Light path is blocked
26	Master full detection sensor	Light path is blocked
27	Master removal unit set SW	Actuator is pressed
28	Master removal sensor	Actuator is pressed
29	Master making unit set SW	Actuator is pressed
34	Original detection sensor	Actuator is pressed
36	Original IN sensor	Reflected light is detected
37	Ink sensor	Ink is detected
38	Overflow sensor	Ink is detected
41	Option board detection signal	When Option board attached

2) Motor/Solenoid Test

Use "START" button for ON/OFF control.

No.	Test Component
56	Original feed solenoid
57	Write pulse motor (reverse) 200 dpi speed
58	Write pulse motor (forward) 200 dpi speed
59	Main motor (10 rpm)
60	Main motor (15 rpm)
61	Main motor (30 rpm)
62	Main motor (Variable Speed)
63	Separation Fan + Suction Fan
64	Write pulse motor (forward) 400 dpi speed
65	Write pulse motor (forward) 300 dpi speed
66	Master loading clutch
67	Paper feed clutch
68	Pressure solenoid
69	
70	Clamp home positioning movement
71	Master removal motor
73	Clamp motor
74	Read pulse motor (forward direction)
77	TPH control signal
79	Image scanner LED
84	Read pulse motor (reverse direction)
89	Master tension plate solenoid

All the Safety switches must be pressed and the Drum must be set in the machine.

Speed changeable by Print speed key on the panel.

Speed changeable by Reproduction Ratio key on the panel.

3) Memory Clear and Counter Stop, etc.

The panel display returns to normal view after **"START"** button is pressed

No.	Clear Items
90	**Partial Memory Clear** Certain portion of RAM contents in the Main PCB, such as Jam and Trouble messages, will be initialized. Inkless timer, Memory SW and User Modes will not be cleared. (The same operation as when turning the power ON while pressing ALL Reset button.)
92	**Prevention of the following operations: master and copy counting, and Key/Card counter signal.** The Master count and Copy count signals will not be output, allowing a service technician to print without increasing the digit of the Master and Copy counters. • The machine will be released from this condition when the power is turned off.
93	**Clearing of the count in the memory.** The master count and total count in the memory will be cleared. Inkless timer, Jam and Trouble messages, Memory SW and User Modes will not be cleared.
97	**User Mode Data Clear** All RAM contents in the Main PCB, excluding Memory switch settings by Test modes 200~217, will be initialized.
98	**Memory Switch Clear** Only the Memory switch settings by Test modes No. 200 ~ 217 will be initialized.

4) Sequential Operation Test

Use "START" button for ON/OFF control.

No.	Test Item
100	**Prints per master display** From the total counter and master counter within the memory, number of prints per master in average is displayed on the panel.
101	**Inking operation** Ink is supplied in the Drum while the Drum rotates at 60 rpm without Pressure roller pressing against the Drum. As the Ink sensor detects ink, the inking stops and a confidential master is made on the Drum. The Drum rotates at 60 rpm while the Pressure roller presses 30 times against the Drum.
102	**Elevator Up/Down operation** The following operations will be repeated while pressing down the Feed-tray down button. • PRESS ➡ Elevator UP ➡ Upper limit sensor "ON" ➡ Elevator Stop • PRESS ➡ Elevator Down ➡ Lower limit sensor "ON" ➡ Elevator Stop
103	**Print positioning motor CW/CCW rotation (one-cycle check)** Return to vertical center position ➡ One second halt ➡ CW direction rotation One second halt ➡ CCW direction ➡ One second halt ➡ Return to vertical center position ➡ Stop.
104	**Clamp plate Open/Close operation (Press START button again to stop)** Rotate Drum to A-position ➡ Open and close the Clamp plate (master release action) ➡ Rotate Drum to A-position ➡ Open and close the Clamp plate (master clamp action (then go back to first step).
105	**ADF Original feed operation (Press START button again to stop)** Original detection sensor ON ➡ Original set operation ➡ Feed original ➡ Eject original ➡ Original detection sensor ON (Repeats this cycle until START button is pressed)
106	**Confidential operation** Confidential master is made three times and the Main motor stops at Drum A-position.
107	**Paper feed & Printing operation (Press START button again to stop)** The paper feed tray rises and the paper is continuously fed until paper supply runs out. • The Copy counter does not operate and paper jam is not detected. • Paper feed tray will be automatically lowered without paper. • Ink can be supplied by the Inking motor. • Printing speed key can be operated.
109	**Machine aging operation** 130 rpm Drum rotation ➡ 3000 times A-position detection ➡ Stop.
110	**Elevator aging operation** UP ➡ Upper limit sensor ON ➡ Stop ➡ DOWN ➡ Lower limit sensor ON ➡ Stop ➡ UP (This cycle is repeated for 5000 times) ➡ Stop.

No.	Test Item
111	**Main motor (Variable speed) + Paper ejection motor (Variable speed) operation** Speed changeable by Print speed key on the panel.
112	**Cutter motor ON [One-cut operation]** Note: The light path of the Master tension plate sensor must be opened (Master tension plate must be down) to operate this test mode.
113	**Master compressing operation** Master compress plate UP ➡ Compressing sensor ON ➡ One second halt ➡ Master compress plate DOWN ➡ Compress sensor ON ➡ One second halt ➡ Master compress plate UP (This is repeated until START button is pressed.)
114	**Image scanner wave length check mode #1** Lights up the Image scanner LED and outputs the scanner wave length. (8 bit data before the shading compensation)
115	**Image scanner wave length check mode #2** Lights up the Image scanner LED and outputs the scanner wave length. (8 bit data after the shading compensation)
116	**TPH thermister reading**
117	**Thermal print head check operation 1** Makes a master of test pattern #1 memorized in the Main PCB.
118	**Thermal print head check operation 2** Makes a master of test pattern #2 memorized in the Main PCB.